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RE: Public comments in regards to the Supplement to the Draft Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada (Draft EIS) (DOE/EIS-0250D-S) (DEIS-S)

Dear Dr. Summerson:

Thank you for providing me with the opportunity to comment on the Supplement to the Draft Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada (Draft EIS) (DOE/EIS-0250D-S) (DEIS-S) and for the short extension in the comment period. I found that the DEIS-S) provided me with some insight into what has been covered and what remains left out, or in error.

Map inaccuracies and deficiencies

1 The boundaries of the Nevada Test Site (NTS), shown in Figure 2-1. on page 2-2, are inaccurate and should be updated in the Final EIS (FEIS). The boundary changes occurred on October 5, 1999 with the signing of Public Law No: 106-65 which included the Military Lands Withdrawal Act of 1999 (Pub.L. 106-65, Div. B, Title XXX, Subtitle A, §§ 3001 - 3041, Oct. 5, 1999, 113 Stat. 885 to 914). On December 5, 1999 the DOE's Nevada Operations Office acknowledged a portion of the changes when they issued a press release titled "Nevada Test Site Boundary Amended." The boundary changes were made over 1 1/2 years before the DEIS-S was issued. It should be noted that in the DEIS-S Appendix C.2, at least nine DOE related agencies are listed as having reviewed this report, including the Nevada Operations Office. Not one of those agencies

2... caught the boundary error problem. The map of the NTS is also shown incorrectly in the Draft EIS since Pahute Mesa was then assigned to the Air Force and the 60 square mile parcel of withdrawn public lands, described in Public Land Order 1662, was then assigned to the DOE as part of the NTS. These maps failed to included the PLO 1662 land as a part of the NTS. Well over a

(1)

2 ... dozen maps, contained in the Draft EIS, will need to be updated before being transferred to the FEIS. Figure 3-1. "Land use and ownership in the Yucca Mountain region," was based on pre-Pub.L. 106-65 land use depiction's, by the DOE, which was demonstrated to be inaccurate with the signing of the Law. The DEIS-S is largely based upon the descriptions contained in the "Yucca Mountain Science and Engineering Report," DOE/RW-0539 which did incorporate current maps of the NTS, as shown in Figure 6.1. on page 1-22. The lack of consistency of the maps in the two reports suggest that the public is relying on a federal agency that should not be in a position to recommend the Yucca Mountain repository for NRC consideration.

2 cont The Lower-right inset on page 2-2, shows the boundary lines that separates the Nevada Test Site, the Nellis Air Force Range, and the Bureau of Land Management administered lands. The map in the FEIS should include the coordinate values of these boundary lines and these should correspond with the coordinate grid system provided in Figures 2-14, 2-15 and 2-16, in the Draft EIS. In addition, before Figures 2-10, 2-14, 2-15 and 2-16, are transferred to the FEIS those Figures should be modified to show the political boundary lines that now divide this area into three politically administered parts.

3 The Draft EIS was rather vague in describing the Site-Related Terms as appears in the inset box at the top of page 1-14. On this same page is Section 1.4.1 Yucca Mountain Site which is also short on specifics of the lands that are proposed to be withdrawn from the public domain for, essentially, forever. Some more specifics appear in Section 3.1.1 Land Use and Ownership. Unfortunately, detailed descriptions of the various administrative boundaries are lacking though there are notes suggesting that more details can be obtained from the administrating agencies. The FEIS should include, in the appendix, specific cited references to all the land use agreements, right-of-way reservations, permits, claims, and Public Land Orders involved in the ongoing and proposed Yucca Mountain repository operations. A developmental history of the legal manipulation of the lands used for this repository should also be presented in this appendix. Each of the existing Public Land Orders, that are involved, should be cited along with the purpose for which the land was withdrawn. Any

4 overlapping withdrawals should be fully explained. The FEIS should contain proper legal descriptions of all the various boundary lines including the Region of Influence, the Land Withdrawal Areas, the Yucca Mountain vicinity, and the Yucca Mountain site. Hopefully, those legal descriptions will be presented in several ways including the Nevada State Plane Coordinate System, the Universal Coordinate System (in decimal degrees), and in the township and range system. All such description terms should be consistent from one land parcel to another parcel.

S&ER flexible design vs. public involvement

5... Though I can understand the reasoning behind the S&ER flexible design, which is the primary subject of the DEIS-S report, it appears to violate the President's Council on Environmental

5 cont Quality (CEQ) NEPA regulations involving public involvement. The fact is that the option to operate the repository at a lower temperature than was proposed in the DEIS with numerous added expensive features, means that major changes are being proposed since the DEIS was issued. This has effectively disrupted the NEPA driven public evaluation processes. The effect of this is that the Yucca Mountain characterization science is being turned into a political tool that minimizes public input components. The DOE is effectively rushing the approval process along shortly after it came up with major design changes and while numerous scientific questions are still unanswered. On that basis alone, the approval milestone dates should be extended by at least a year or two.

Cumulative Impacts

6 Section 3.3 of the DEIS-S is titled "Cumulative Impacts." This section consist of just two short paragraphs. The FEIS should devote far more space to this section. For example, the new proposals for installing titanium shields over the waste package will require the mining of large quantities of titanium ore, frequently in other parts of the world. It would be appropriate to examine the cumulative environmental impact of extracting, processing and transporting such large amounts of titanium. Also, an evaluation should be made to assess the possible impact on other users of titanium such as the U.S. aerospace industry and the U.S. submarine construction industry. Since the proposals include the use of large quantities of other expensive metals, such as nickel and molybdenum and chromium, and environmental examination of the environmental impacts of their extraction, production and transport would be in order.

7 Another cumulative impact that was not mentioned in the DEIS-S, and only hinted at in the DEIS, involves the nearly one thousand underground nuclear detonations conducted at the adjacent Nevada Test Site. These, explosively blasted spent-fuel like debris into the underground formations that lay "up-stream" from the Yucca Mountain Study site. The testers were exempt from the waste containment regulations that a Yucca Mountain repository must meet. In fact, about a third of the tests were conducted below, or just above, the water table, often leaving nuclear debris in regions with flowing water. In 1997 the DOE's Nevada Operations Office released a report, largely generated by its contractors, that estimated that a partial cleanup of the NTS underground test areas could cost as much as $7.3 trillion ("Focused Evaluation of Selected Remedial Alternatives for the Underground Test Area (DOE/NV--465), April 1997). The Cumulative Impacts section of the FEIS should mention that $7.3 trillion figure as a point of reference.

Dissimilar metals corrosion studies

8... The repository tunnels will likely contain large amounts of ground support elements. The FEIS should explain whether or not studies have been made in regard to increased waste package corrosion rates if they come in contact with the steel ground support elements. I understand that that Alloy-22 review report is not

8 cont due, in final form, until February 2002. After that the public should be provided with review opportunities. This should not take place after the DOE has recommended the site.

9 The DEIS-S mentions the use of back-fill material but its not clear what material will be chosen. The recommendation of the Yucca Mountain site should not be made until firm decisions have been made about the what back-fill materials will go where. Just recently, the decision to back-fill the WIPP repository with magnesium oxide has been questioned which may result in further

10 evaluations. The Yucca Mountain repository should not be recommended until all such questions are answered with full public involvement.

Glossary changes

11 The "affected environment" definition should include speculations about human and other organism distributions thousands of years in the future. The recent dispersion of humans, in the southwestern U.S. during the last 100 years, should be taken into account. The DOE's claims, of maintaining protective controls into the distant future, should be taken with a grain of salt.

12 In the definition for "heavy metal" insert "and/or generated" after "used."

13 In the definitions of "saturated zone" and "water table" insert the word "liquid" before the word "water."

14 The subject of "thermal shunts" should be thoroughly described in the body of the FEIS. Recommendation of the Yucca Mountain site should not take place until all the potential waste packages have been evaluated with the addition of thermal shunts they might contain.

Conclusion

15 Though both the DEIS and the DEIS-S contained some sections on the historical search for a U.S. high-level nuclear waste repository, they failed to tell the full story which includes efforts begun in the 1950's and study sites in southeastern U.S. salt domes. Tones

16 of reports have been generated as billions of dollars have been invested in multiple dead-end research projects. Investing in on-site storage casks seems to me a far superior solution until humans evolve the capacity to comprehend the problems they are generating. The DEIS-S and the Science and Engineering Report make it quite clear that reliance upon numerous manufactured

17 barriers has increased dramatically during the last five years of the Yucca Mountain study proposals. This indicates efforts are being made to compensate for weaknesses in the natural barriers that were supposed to be the key factor in the original selection of this site. The efforts to compensate for these weaknesses has produced a dramatic increase in the cost estimates to entomb the wastes.

18 All public comments received should be published verbatim and distributed to the 37 public reading rooms listed in Appendix D.8. In the near future I hope that these comment will be made available on the Internet.

I urge you to join with the team that created the Yucca Mountain Science and Engineering Report to issue a Final EIS that will serve to engage the public in debates that will continue for decades as the spent fuel and HLW canisters await the opening of a more reasonable repository.

Sincerely,

Vernon J. Brechin

Vernon Brechin

CC: Dr. Arjun Makhijani, President, IEER
Mr. Robert Loux, Executive Director, Nevada Agency for Nuclear Projects
The Honorable Kenny Guinn, Governor of Nevada
The Honorable Frankie Sue Del Papa, Attorney General of Nevada